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RELATIONSHIP BETWEEN RAIN AND BIRD-AIRCRAFT COLLISIONS AT JOHN F. KENNEDY INTERNATIONAL AIRPORT, 1986-1990

Steven W. Gabrey, U.S. Department of Agriculture, Denver Wildlife Research Center, 6100 Columbus Avenue, Sandusky, OH 44870

Abstract: Puddles of rainwater frequently form on paved surfaces at airports, attracting birds searching for fresh drinking or bathing water. Puddles may persist for several days after the rain event. Therefore, the risk of a bird-aircraft collision may be expected to be higher when puddles are present (up to 3 days after a rain event) than when puddles have evaporated.

I examined the possible relationship between the time (days) after rain and the number of incidents (a bird-aircraft collision involving 1 or more birds) during each of 3 seasons (spring, summer, and fall), and for the 3 seasons combined at John F. Kennedy International Airport. Because birds often flock to puddles, I also examined the relationship between time after rain and the number of individual birds struck by aircraft. I used 2 levels of rain, $\geq$0.1"/day and $\geq$0.4"/day, for the analysis.

For both levels of rain, the frequency of incidents occurring within the first 3 days after rain was similar ($P \geq 0.11$) to that of all remaining days for each season, and for all seasons combined. When seasons were analyzed separately, no significant correlation was found between the number of incidents and time after either level of rain. When seasons were analyzed separately, no significant correlation was found between the number of birds struck and time after either level of rain. With all 3 seasons combined, a weak (but statistically significant, $P < 0.05$) negative correlation was found between time after 0.1"/day of rain and both the number of incidents and the number of individuals struck. No correlation was found when all seasons were combined using 0.4"/day rain.

Although no strong statistical relationship was detected between time after rain and the number of incidents or number of individuals struck, puddles do sometimes attract birds to the proximity of the runways. Thus, airport operations personnel should continue to remove standing water and to deter bird use of puddles.